

Remarks

Reconsideration of the rejections set forth in the Office Action dated June 30, 2006 is respectfully requested. Claims 1-31 are currently pending. Of these claims, claims 5 and 6 have been objected to, while claims 1-4 and 7-31 have been rejected.

Allowable Subject Matter

Claims 5 and 6 have been objected to as being dependent upon a rejected base claim. The Examiner has indicated that claims 5 and 6 would be allowable if rewritten in independent form to include all of the limitations of their base claim and any intervening claims. As the Applicant believes that independent claim 1, from which claims 5 and 6 each depend, is allowable over the cited art, the Applicant has chosen not to rewrite claims 5 and 6 in independent form at this time.

Rejections under 35 U.S.C. § 103

Claims 1, 14, 19, 25, 30, and 31 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publication No. US 2002/0150041 filed by Reinshmidt et al., herein after “Reinshmidt” in view of U.S. Patent Application Publication No. US 2003/0204619 filed by Bays, herein after “Bays.” Claims 2-4, 7-13, 15-18, 20-24, and 26-29 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Reinschmidt in view of Bays and further in view of U.S. Patent Application Publication No. US 2003/014105A1 filed by Desineni et al., hereinafter “Desineni.”

1. Independent Claims 1, 14, 25, 31, and their respective dependents

Independent claim 1 recites a method for detecting a forwarding problem within an autonomous system. The method includes forwarding a message from a source node of the autonomous system along a path to an external address that is not an address located within the autonomous system. The message is removed from the path at a destination node of the

autonomous system, and a response is initiated from the destination node that is arranged to be sent to the source node along a first path segment of the path. The response is arranged to indicate that the intermediate node does not have a forwarding problem.

The Examiner has argued that Reinshmidt teaches the limitations of claim 1, except for the limitation of removing the message from the path at the destination node. For this limitation, the Examiner cites the teachings of Bays.

Claim 1 recites that a response is initiated from the destination node that is arranged to be sent to the source node along a first path segment of the path, and that the response is arranged to indicate that the intermediate node does not have a forwarding problem. The Examiner has cited Fig. 1 of Reinshmidt, as well as paragraphs [0073] and [0074] of Reinshmidt, as teaching this limitation. It is respectfully submitted that neither the figures nor the paragraphs even reasonably suggest initiating any response that indicates that an intermediate node does not have a forwarding problem. Reinshmidt discusses intermediate nodes, but does not describe any response that indicates that an intermediate node does not have a forwarding problem.

On page 3 of the Office Action dated June 30, 2006, in his argument that Reinshmidt teaches that a response is initiated from a destination node, the Examiner states:

“initiating a response (target reply for pin message) from the destination node (B2 in autonomous system 12), the response being arranged to be sent along the first path segment (14) from the destination node (B2 in autonomous system 12) to the source node (A2 in autonomous system 12), wherein the response (for pingmessage) is arranged to indicate that the intermediate node (C,D, ...) does not have a forwarding problem....”

The Applicant is unable to locate any teaching of a “target reply for a pin message” anywhere in Reinshmidt. At best, Reinshmidt discloses at paragraph [0025] that a ping packet reaches a destination node and returns to a source node. Such a ping packet is not initiated from the destination node, as the ping packet is initiated by the source node and returned to the source node. System 12 of Reinshmidt does not disclose or suggest that any response, or even a target

message, is sent from a destination node to indicate that intermediate nodes do not have a forwarding problem. As Reinshmidt does not appear to teach initiating a response from a destination node that is sent to a source node and indicates that an intermediate node does not have a forwarding problem, claim 1 is believed to be allowable over the cited art for at least this reason.

The Examiner has admitted that Reinshmidt does not teach of removing a message from a path at a destination node. It is respectfully submitted that contrary to the Examiner's arguments, Bays also does not teach of removing the message (*i.e.*, the message arranged to be sent to a message destination that is an external address) from the path at the destination node. The passage cited by the Examiner at paragraphs [0074] and [0075] includes the following statement:

“...routing control device 20 can **not** expect to consistently receive a ... code three response allowing it to explicitly determine that the last **intermediate system in a given path** has been reached and to terminate the probing sequence... routing control device 20 terminates the transmission of probe packets, if it receives any kind of ... type three response....” [emphasis added]

It is respectfully submitted that an intermediate system is not equivalent to a destination node as recited is claim 1. At paragraph [0072], Bays discloses that a target selection process seeks to identify the last intermediate system in a path to a destination network. As the last intermediate system is the target intermediate system, the traceroute utility sends a message that has the target intermediate system as a destination. This message is not arranged to be sent to a message destination that is not the target intermediate system. In other words, Bays appears to disclose that a last intermediate system in a path is the intended destination of a traceroute message. Claim 1 recites that the destination node is not the intended destination of a message, as the message is arranged to pass to an external address.

The passage of Bays cited by the Examiner discloses that a routing control device terminates the transmission of probe packets. The routing control device is described by Bays as sending the probe packets in paragraph [0075]. Hence, the Applicant submits that terminating

the transmission of probe packets using a routing control device is not equivalent to removing a message from a path at a destination node. Bays does not teach of, or reasonably suggest, removing a message from a path at a destination node but, instead, discloses ceasing the sending of messages to an intermediate system. No message appears to be removed from any path at a destination node in Bays. A “probing sequence” is not terminated in Bays by removing it from a path at a destination node. Rather, a “probing sequence” is terminated in Bays by not sending it from a source node. Therefore, claim 1 is also believed to be allowable over the cited art for at least these reasons as well.

Claims 2-7 each depend either directly or indirectly from claim 1 and are, therefore, each believed to be allowable over the cited art for at least the reasons set forth above with respect to claim 1. Each of these dependent claims recites additional limitations which, when considered in light of claim 1, are believed to further distinguish the claimed invention over the cited art. By way of example, the Examiner has already indicated that he believes claims 5 and 6 contain allowable subject matter.

Independent claims 14, 25, and 31 each recite similar limitations as recited in claim 1. As such, claims 14, 25, 31, and their respective dependent claims are each believed to be allowable over the cited art for at least the reasons set forth above with respect to claim 1.

2. *Independent Claims 8, 19, 30, and their respective dependents*

Independent claim 8 recites a method for detecting a forwarding problem within an autonomous system. The method includes forwarding a message from a source node of the autonomous system along a path to an external address that is not an address located within the autonomous system. A determination is made regarding whether a response to the message (the message that is sent along the path to the external address) is received from the destination node, which is not the message destination. The method also includes initiating a process to identify a source of the forwarding problem when it is determined that the response to the message is not received from the destination node.

On page 5 of the Office Action dated June 30, 2006, the Examiner admits that Reishmidt and Bays do not disclose the limitations of “determining whether a response to the message is received from the destination node and initiating a process to identify a source of the forwarding problem when it is determined that the response to the message is not received from the destination node.” However, the Examiner argues that Desineni discloses these limitations.

The passage of Desineni cited by the Examiner at paragraph [0027] discloses that an intermediate node sends a trace request received from a subject node to each up-line node, and obtains information about paths whenever trace requests are received. If there are up-line nodes, the trace request is forwarded to each up-line node. Whenever trace replies have been received by the intermediate node, or a time out occurs, a single trace reply is sent by the intermediate node to the subject node.

Desineni does not teach or reasonably suggest initiating a process to identify a source of the forwarding problem when it is determined that the response to the message is not received from the destination node. At best, if a time out occurs before presumably all trace replies are received, the intermediate node of Desineni initiates a single trace reply to send to a subject node. There is no suggestion of determining if any expected trace replies are missing, or of identifying a source of a forwarding problem when a trace reply is not received. In the passage cited by the Examiner, Desineni does not appear to contemplate initiating any process to identify a source of a problem if a message is not received from a destination node, contrary to the Examiner’s assertions.

The Examiner argues that Desineni discloses retransmitting a request via neighbor nodes via a path (page 5 of Office Action dated June 30, 2006). While the Applicant is unable to locate such a disclosure in Desineni, the Applicant submits that even such a retransmission does not contemplate identifying a source of a forwarding problem. It is respectfully submitted that retransmitting a request via neighbor nodes at best allows a request to reach an intended destination, but does not involve identifying a source of a forwarding problem when a trace reply

is not received. For at least the reasons cited above, claim 8 is believed to be allowable over the cited art.

Claims 9-13 each depend from claim 8 and are each believed to be allowable over the cited art for at least the reasons set forth with respect to claim 8. Each of these claims also recites additional limitations which, when considered in light of claim 8, are believed to further distinguish the claimed invention over the cited art.

Independent claims 19 and 30 each recite similar limitations as recited in claim 8. Accordingly, claims 19, 30, and their respective dependent claims are each believed to be allowable over the cited art for at least the reasons set forth above with respect to claim 8.

Conclusion

For at least the foregoing reasons, the Applicant believes all the pending claims are in condition for allowance and should be passed to issue. If the Examiner feels that a telephone conference would in any way expedite the prosecution of the application, please do not hesitate to call the undersigned at (408) 868-4096.

Respectfully submitted,

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